

IN THE CLAIMS:

Please cancel Claims 3, 4, and 12-14 without prejudice to or disclaimer of the subject matter recited therein.

Please amend Claims 1, 10, 19, and 31 as follows:

1. (Currently Amended) An augmented reality presentation apparatus for superimposing a virtual object in a real space, characterized by comprising:

objective viewpoint augmented reality presentation means for presenting to an observer an augmented reality view viewed from an objective viewpoint position, which differs from ~~any player's a~~ viewpoint position ~~of any player, to an observer,~~

wherein said objective viewpoint augmented reality presentation means includes

first video sensing means for sensing a video of the real space, including ~~a player~~ ~~players~~ who is experiencing ~~are observing~~ an augmented reality, viewed from the objective viewpoint position;

first video generation means for generating a video of the virtual object viewed from the objective viewpoint position;

first video composition means for composing an augmented reality video viewed from the objective viewpoint position on the basis of the sensed video of the real space sensed by said first video sensing means and the generated video of the virtual object generated by said first video generation means; ; and

objective viewpoint video display means for displaying the composed augmented reality video composed by said first video composition means on a screen of an observer's display apparatus, the observer's display apparatus being separate from a head-mounted display any player's display apparatus and not being worn by any player;

wherein said apparatus further comprises:

player's viewpoint augmented reality presentation means for presenting an augmented reality view viewed from a player's viewpoint;

wherein said player's viewpoint augmented reality presentation means includes a head-mounted display having a screen;

second video sensing means for sensing a video of the real space viewed from the player's viewpoint position;

player's viewpoint position acquiring means for acquiring information indicating the player's viewpoint position;

second video generation means for generating a video of the virtual object viewed from the player's viewpoint position using the information indicating the player's viewpoint position;

second video composition means for composing an augmented reality video viewed from the player's viewpoint position on the basis of the sensed video of the real space sensed by said second video sensing means and the generated video of the virtual object generated by said second video generation means; and

player's viewpoint video display means for displaying the composed augmented reality video composed by said second video composition means on a the screen of said head-mounted display, wherein said head-mounted display includes said

second video sensing means and said player's viewpoint video display means, and is worn by a player, player's display apparatus worn by the player.

2. - 5. (Cancelled)

6. (Previously Presented) The apparatus according to claim 1, characterized in that parameters of said first video sensing means are known, and said first video generation means generates the video of the virtual object viewed from said objective viewpoint position in accordance with the known parameters.

7. (Previously Presented) The apparatus according to claim 1, characterized in that some of parameters of said first video sensing means are variable,

said apparatus further comprises measurement means for measuring changes of the parameters, and

said first video generation means generates the video of the virtual object viewed from said objective viewpoint position in accordance with the parameters measured by said measurement means.

8. (Original) The apparatus according to claim 7, characterized in that the parameters of said first video sensing means measured by said measurement means include at least one of a viewpoint position/posture, and zoom ratio.

9. (Previously Presented) The apparatus according to claim 1, characterized in that when a plurality of first video sensing means equivalent to said first video sensing means are present,

said apparatus further comprises selection means for receiving a plurality of videos of the real space from said objective viewpoint position from the plurality of first video sensing means, and outputting a video of the real space viewed from said objective viewpoint position input from one selected first video sensing means to said first video composition means, and

said first video composition means generates a video of the virtual object viewed from said objective viewpoint position using parameters of the first video sensing means selected by said selection means.

10. (Currently Amended) An augmented reality presentation method for superimposing a virtual object in a real space, characterized by comprising:

an objective viewpoint augmented reality presentation step of presenting to an observer an augmented reality view viewed from an objective viewpoint position, which differs from ~~any player's~~ a viewpoint position of any player; ~~to an observer~~;

wherein said objective viewpoint augmented reality presentation step includes

a first video sensing step of sensing a video of the real space, including a player who is experiencing ~~players who are observing~~ an augmented reality, viewed from the objective viewpoint position;

a first video generation step of generating a video of the virtual object viewed from the objective viewpoint position;

a first video composition step of composing an augmented reality video viewed from the objective viewpoint position on the basis of the sensed video of the real space sensed in said first video sensing step and the generated video of the virtual object generated in said first video generation step, and

an objective viewpoint video display step of displaying the composed augmented reality video composed in said first video composition step on a screen of an observer's display apparatus, the observer's display apparatus being separate from a head-mounted display ~~any player's display apparatus and not being worn~~ by any player;

wherein said method further comprises:

a player's viewpoint augmented reality presentation step of presenting an augmented reality view viewed from a player's viewpoint position;

wherein said player's viewpoint augmented reality presentation step includes a second video sensing step of sensing a video of the real space viewed from the player's viewpoint position;

a player's viewpoint position acquiring step of acquiring information indicating the player's viewpoint position;

a second video generation step of generating a video of the virtual object viewed from the player's viewpoint position using the information indicating the player's viewpoint position;

a second video composition step of composing an augmented reality video viewed from the player's viewpoint position on the basis of the sensed video of the real space sensed in said second video sensing step and the generated video of the virtual object generated in said second video generation step; and

a player's viewpoint video display step for displaying the composed augmented reality video composed in said second video composition step on a screen of a head-mounted display worn by a player's display apparatus worn by the player.

11. - 14. (Cancelled)

15. (Previously Presented) The method according to claim 10, characterized in that parameters of means for sensing said objective viewpoint video are known, and  
said first video generation step includes the step of generating the video of the virtual object viewed from said objective viewpoint position in accordance with the known parameters.

16. (Previously Presented) The method according to claim 10, characterized in that some of parameters of means for sensing a video viewed from said objective viewpoint position are variable,  
said method further comprises the measurement step of measuring changes of the parameters, and

said first video generation step includes the step of generating the video of the virtual object viewed from said objective viewpoint position in accordance with the parameters measured in the measurement step.

17. (Previously Presented) The method according to claim 16, characterized in that the parameters of the means for sensing a video viewed from said objective

viewpoint position measured in the measurement step include at least one of a viewpoint position/posture, and zoom ratio.

18. (Previously Presented) The method according to claim 10, characterized in that when a plurality of means for sensing a video viewed from said objective viewpoint position are present,

said method further comprises the selection step of receiving a plurality of videos of the real space viewed from an objective viewpoint position from the plurality of means for sensing a video viewed from said objective viewpoint position, and outputting the video of the real space viewed from an objective viewpoint position input from one selected means for sensing a video of said objective viewpoint position to means for compositing an objective viewpoint video, and

said first video composition step includes the step of generating a video of the virtual object viewed from said objective viewpoint position using parameters of the means for sensing a video viewed from an objective viewpoint position selected in the selection step.

19. (Currently Amended) A storage medium storing a program code for superimposing a virtual object in a real space when said program code is loaded by a computer, characterized by comprising:

a program code of an objective viewpoint augmented reality presentation step of presenting to an observer an augmented reality view viewed from an objective viewpoint

position, which differs from ~~a any player's~~ viewpoint position of any player; ~~to an~~ observer;

wherein said program code of the objective viewpoint augmented reality presentation step includes

a program code of a first video sensing step of sensing a video of the real space, including a player who is experiencing ~~players who are observing~~ an augmented reality, viewed from the objective viewpoint position;

a program code of a first video generation step of generating a video of the virtual object viewed from the objective viewpoint position;

a program code of a first video composition step of composing an augmented reality video viewed from the objective viewpoint position on the basis of the sensed video of the real space sensed in said first video sensing step and the generated video of the virtual object generated in said first video generation step; and

a program code for an objective viewpoint video display step of displaying the composed augmented reality video composed in said first video composition step on a screen of an observer's display apparatus, the observer's display apparatus being separate from a head-mounted display ~~any player's display apparatus and not being~~ worn by any player,

wherein said storage medium further stores:

a program code for a player's viewpoint augmented reality presentation step of presenting an augmented reality view viewed from a player's viewpoint position;

wherein said program code for the player's viewpoint augmented reality presentation step includes



a program code for a second video sensing step of sensing a video of the real space viewed from the player's viewpoint position;

a program code for a player's viewpoint position acquiring step of acquiring information indicating the player's viewpoint position;

a program code for a second video generation step of generating a video of the virtual object viewed from the player's viewpoint position using the information indicating the player's viewpoint position;

a program code for a second video composition step of composing an augmented reality video viewed from the player's viewpoint position on the basis of the sensed video of the real space sensed in said second video sensing step and the generated video of the virtual object generated in said second video generation step; and

a program code for a player's viewpoint video display step of displaying the composed augmented reality video composed in said second video composition step on a screen of a head-mounted display ~~player's display apparatus~~ worn by the player.

20.-23. (Cancelled)

24. (Previously Presented) The medium according to claim 19, characterized in that parameters of means for sensing said objective viewpoint video are known, and the program code of said first video generation step includes the step of generating the video of the virtual object viewed from said objective viewpoint position in accordance with the known parameters.

25. (Previously Presented) The medium according to claim 19, characterized in that some of parameters of means for sensing a video viewed from said objective viewpoint position are variable,

the program code of said medium further comprises the measurement step of measuring changes of the parameters, and

the program code of said first video generation step includes the step of generating the video of the virtual object viewed from said objective viewpoint position in accordance with the parameters measured in the measurement step.

26. (Previously Presented) The medium according to claim 25, characterized in that the parameters of the means for sensing a video viewed from said objective viewpoint position measured in the measurement step include at least one of a viewpoint position/posture, and zoom ratio.

27. (Previously Presented) The medium according to claim 19, characterized in that when a plurality of means for sensing a video viewed from said objective viewpoint position are present,

said medium further comprises a program code of the selection step of receiving a plurality of videos of the real space viewed from an objective viewpoint position from the plurality of means for sensing a video viewed from said objective viewpoint position, and outputting the video of the real space viewed from an objective viewpoint position input from one selected means for sensing a video of said objective viewpoint position to means for compositing an objective viewpoint video, and

the program code of said first video composition step includes the step of generating a video of the virtual object viewed from said objective viewpoint position using parameters of the means for sensing a video viewed from an objective viewpoint position selected in the selection step.

28. (Original) The apparatus according to claim 1, characterized by further comprising printing means,

in that said first video composition means outputs the augmented reality video to said printing means.

said printing means grabs one frame of the received video and prints out to the paper as a still image.

29. (Original) The method according to claim 10, characterized by further comprising printing step,

in that in said first video composition step the augmented reality video is output to means for printing,

in said printing step one frame of the received video is grabbed and printed out to the paper as a still image.

30. (Cancelled)

31. (Currently Amended) An augmented reality presentation apparatus for superimposing a virtual object in a real space, characterized by comprising:

an objective viewpoint augmented reality presentation unit adapted to present to an observer an augmented reality view viewed from an objective viewpoint position, which differs from ~~any player's~~ a viewpoint position of any player, to an observer;

wherein the objective viewpoint augmented reality presentation unit includes ;

a first video sensing unit adapted to sense a video of the real space, including a player who is experiencing ~~players who are~~ observer an augmented reality, viewed from the objective viewpoint position;

a first video generation unit adapted to generate a video of the virtual object viewed from the objective viewpoint position;

a first video composition unit adapted to compose an augmented reality video viewed from the objective viewpoint on the basis of the sensed video of the real space sensed by said first video sensing unit and the generated video of the virtual object generated by said first video generation unit; and

an objective viewpoint video display unit adapted to display the composed augmented reality video composed by said first video composition unit on a screen of an observer's display apparatus, the observer's display apparatus being separate from a head-mounted display ~~any player's display apparatus and not being~~ worn by any player;

wherein the apparatus further comprises;

a player's viewpoint augmented reality presentation unit adapted to present an augmented reality view viewed from a player's viewpoint position;

wherein the player's viewpoint augmented reality presentation unit includes:

a head-mounted display having a screen;

a second video sensing unit adapted to sense a video of the real space viewed from the player's viewpoint position;

a player's viewpoint position acquiring unit adapted to acquire information indicating the player's viewpoint position;

a second video generation unit adapted to generate a video of the virtual object viewed from the player's viewpoint position using the information indicating the player's viewpoint position;

a second video composition unit adapted to compose an augmented reality video viewed from the player's viewpoint position on the basis of the sensed video of the real space sensed by said second video sensing unit and the generated video of the virtual object generated by said second video generation unit; and

a player's viewpoint video display unit adapted to display the composed augmented reality video composed by said second video composition unit on a the screen of said head-mounted display, wherein said head-mounted display includes said second video sensing unit and said player's viewpoint video display unit, and is worn by a player.  
a player's display apparatus worn by the player.

32. (Cancelled)